

C l a i m s

1.

5 A method of continuous hydrolysis of organic material, w h e r e i n the method comprises the following steps:

- a) heating a sludge containing the organic material with a low content of abrasive components and a dry solids content of 1-20%, to a temperature of approximately 100 °C,
- 10 b) mixing the sludge with steam at a pressure of 1-4 bar a,
- c) leading the sludge/steam mixture to a preheating tank (4),
- d) increasing the pressure of the sludge/steam mixture from 3 to 10 bar a,
- e) leading the sludge/steam mixture to a reactor (7),
- e) depressurising the sludge/steam mixture to 1-4 bar a in a depressurising tank
- 15 (10),
- f) separating sludge and steam, and possibly
- g) cooling the sludge further.

2.

20 A method in accordance with Claim 1, w h e r e i n the sludge in step a) is heated through heat exchange with the sludge from step f).

3.

A method in accordance with one or more of the preceding Claims,  
25 w h e r e i n the residence time for the sludge/steam mixture in the reactor (7) is from 5 to 60 minutes at a temperature of 130-180 °C.

4.

A method in accordance with one or more of the preceding Claims,  
30 w h e r e i n the depressurisation of the sludge/steam mixture in the depressurisation tank is carried out by means of one or more nozzles (9).

5.

A method in accordance with one or more of the preceding Claims,  
35 w h e r e i n steam from the depressurisation tank (10) is mixed with the sludge in step b).

6.

An arrangement for continuous hydrolysis of organic material in the form of sludge with a dry solids content of 1-20%, w h e r e i n the arrangement includes:

- 5 (i) a feed pump connected to a first heat exchanger (2) for heating the incoming sludge through heat exchange with the outgoing sludge,
- (ii) a mixing device (3) for mixing the sludge with steam, connected to the first heat exchanger (2),
- (iii) a preheating tank (4) connected to the mixing device (3),
- 10 (iv) a pump (5) for increasing the pressure of the steam/sludge mixture by from 3 to 10 bar a, connected to the preheating tank (4),
- (v) a reactor (7) at a temperature of 130-180 °C, connected to the pump (5),
- (vi) a depressurising tank (10) connected to the reactor (7), which depressurising tank (10) includes a nozzle (9) for depressurising the steam/sludge mixture to 1-4 bar
- 15 a.

7.

An arrangement in accordance with Claim 6, w h e r e i n the depressurising tank (10) is connected to a pump (11) for pumping sludge from the  
20 depressurising tank (10) to the first heat exchanger (2).

8.

An arrangement in accordance with one or more of Claims 6-7, w h e r e i n the depressurising tank (10) includes a control valve (13) with associated lines for  
25 controlling steam from the depressurising tank (10) to the mixing device (3).

O. nr. P1232PC00

A method of and arrangement for continuous hydrolysis of organic material in the form of sludge with a dry solids content of 1-20% are described. The method includes the following steps:

- a) heating a sludge containing the organic material with a low content of abrasive components and a dry solids content of 1-20%, to a temperature of approximately 100 °C,
- b) mixing the sludge with steam at a pressure of 1-4 bar a,
- c) leading the sludge/steam mixture to a preheating tank (4),
- d) increasing the pressure of the sludge/steam mixture from 3 to 10 bar a,
- e) leading the sludge/steam mixture to a reactor (7),
- e) depressurising the sludge/steam mixture to 1-4 bar a in a depressurising tank (10),
- f) separating sludge and steam, and possibly
- g) cooling the sludge further.

The arrangement includes:

- (i) a feed pump connected to a first heat exchanger (2) for heating the incoming sludge through heat exchange with the outgoing sludge,
- (ii) a mixing device (3) for mixing the sludge with steam, connected to the first heat exchanger (2),
- (iii) a preheating tank (4) connected to the mixing device (3),
- (iii) a pump (5) for increasing the pressure of the steam/sludge mixture by from 3 to 10 bar a, connected to the preheating tank (4),
- (v) a reactor (7) at a temperature of 130-180 °C, connected to the pump (5),
- (vi) a depressurising tank (10) connected to the reactor (7), which depressurising tank (10) includes a nozzle (9) for depressurising the steam/sludge mixture to 1-4 bar a.

Figure 1